

The Role of Technology in Internationalising the Language of Education¹

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Abstract

There is no doubt that English is the most international language used for both formal and informal communication purposes across the globe. For instance, the common language used by businesses, governments and travellers from different linguistic backgrounds is English. This popularity and general acceptance has placed the English-speaking countries in an advantageous position in terms of attracting students from different parts of the globe. This trend is evidenced by the numbers of international enrolments and partnerships between international and English-speaking universities, in particular, for Business related courses.

English language programs have been specially designed for the purpose of preparing international students for tertiary education at English-speaking universities. Although these programs have been successful, the fact is that the linguistic skills and abilities of many international students do not always match those of the local English-speaking students. Hence, additional methods of overcoming this problem should also be taken into consideration. An effective approach would be to design courses and teaching materials in such a way that learning reliance on language is minimised.

This paper investigates how the latest technologies can be used in creating learning environments with a lower text dependency to suit students from different linguistic backgrounds. In order to determine the learning effectiveness of less language-dependent teaching materials, a visually rich multimedia system on Project Management was used as an instrument. This multimedia system was developed by the author and his colleagues at the University of Southern Queensland in Australia. A group of 34 undergraduate students in Operations Management from a Mexican tertiary institute were chosen for this particular study. Spanish was the native language of all of these students. After giving them a seminar on introductory project management via the multimedia system, they were interviewed. The comments and feedback provided by these students have demonstrated that visual features in educational multimedia can remove the dependency on text for understanding the concepts. Hence, it would possible to develop educational multimedia in a generic language such as English and then make it available for students from different parts of the world.

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Introduction

The visually rich multimedia system referenced in this paper is an operations management application. However, the same principles would also apply to various topics both within and outside Business and Management topics. It would be appropriate to provide a background and discuss the reasons for considering the use of visually rich educational multimedia systems. Let us start by discussing one of the most widely used types of modality. That is the medium of text. As we know text can be delivered in different forms depending on the language used. English is, without any doubt, the most widely used language. Therefore, a large amount of teaching and learning materials are being developed and delivered in English. The reasons for its popularity and general acceptance are discussed below.

English has become the international language of communication in formal and informal situations. Its uses have even extended to situation when people from different linguistic backgrounds choose it as their common language. This global popularity is not just attributed to the fact that English is the language of a number of highly industrial and powerful nations in the world. It is also due to the fact that English is a very rich language. This richness is a result of marriage between Latin-based and Germanic Anglo Saxon languages. The English people became bilingual for a few hundred years after the French invasion. The French vocabulary gradually influenced English and converted it to a rich language. The modern English vocabulary contains around sixty percent of words of Latin origin. It is interesting to note that this combination has made English an ideal base language for learning other Indo-European languages used in Europe.

Special Features of English

English has evolved to a language with some unique features that are not found even in Romance or Germanic languages. These features contribute a great deal to having direct and relaxed conversation in any situation. For instance, take the

pronoun *you*. Both Latin-based (Romance) and Germanic languages contain formal and informal versions. Formal *you* in German is *Sie* and it is used to address strangers or signify respect. The use of *Du* (Informal *you*) in any of these situations would signal ignorance or disrespect. Similarly, other Romance languages such as French and Spanish follow the same accepted “rules”. There are many other languages (such as Persian and Turkish) that have the same or very similar style. English however, adopts only one second person pronoun. In many ways, this style of addressing avoids building barriers between people and does not create different categories of friends, colleagues or acquaintances. Hence, a more relaxed and barrier-free relationship can be created in any conversation. Referring to people using the formal *you* would create a barrier, which makes the use of first names almost impossible. Perhaps that is why the first name terms are more common in English-speaking societies. Unlike many other societies, using first names is not regarded as being impolite, disrespectful or aggressive.

It would be reasonable to conclude that the language richness and the barrier-free way of conversation have certainly contributed to making English the preferred language of governments, businesspeople, movies, music, the Internet and of course education. Therefore, students from many parts of the world also choose English as their preferred language of education and study at English-speaking universities.

Language and Conveying Thoughts

All languages stem from the same origin – human thought. With the eye and ear of our mind we see images and hear sounds of actions and events. We can, without any conscious effort, store these thought-based clips for future reference or turn them into actions. If we wish to share our thought-based information with others, then we will have to carry out some form of conversion process. Unfortunately, we have not achieved that level of sophistication to convey our thoughts directly to another human being. Although symbolic representation is still a very effective way, language-based communication is perhaps the most commonly used method. For example, this paper is relying on the use of a language to share the author’s ideas with others.

It would not be unrealistic to accept that most of the international students do not possess the same linguistic skills and abilities as their classmates from the English-speaking background. This lack of ability to match the language skills and subtleties of their local English-speaking classmates can place the international students in a disadvantaged position. It can even cause embarrassment, frustration or discouragement for some.

Most English-speaking universities have special programs for assisting international students with their language skills. These programs have proven to be successful. However, it will not be realistic to expect an equal level of conversational or written subtleties for anyone who spends only a limited amount of time to learn a language.

It would certainly help this group of students if teaching materials were also designed in such a way that dependency and reliance on language was kept to minimum. Technology plays an important role in achieving this objective. For example, using multimedia teaching materials would be a step in the right direction.

Unfortunately, at the present time, we do not have the technology for any direct interface and transfer between humans and machines. The existing computer technology is ideal for creating multimedia materials. Therefore, we should focus on feasible approaches such as the effective use of visual and sound features to complement the teaching materials. Visual effects are very effective in conveying the underlying messages to the learners.

Language Dependency in Teaching Materials

To determine the effectiveness of using visually rich multimedia learning environments in teaching, a group of students from Spanish-speaking background was selected. These students participated in a specially-designed study with the aim of determining their preference for the language of instruction. The group was made up of 34 undergraduate students in management-related subjects from the *Instituto Tecnológico Autónomo de México (ITAM)* in Mexico City.

The session took around half a day. An interactive lecture using a visually rich multimedia learning environment was presented to the students and then they had the opportunity of reinforcing the concepts learnt by undertaking a case study. The visually rich system used is titled: The *Web Enhanced Multimedia Learning Environment* (WEMLE) for Project Management.

WEMLE has been developed by the author and his colleagues at the University of Southern Queensland (USQ) in Australia) and can be viewed at:

<http://www.usq.edu.au/course/material/MGT2102/>

This visually rich learning environment is based on established learning principles. It also caters for different learners' modal preferences and provides them with the opportunity to utilise the whole brain (both right and left hemispheres). Hence, learning is not solely dependent on the medium of text or language. WEMLE was adopted as the instrument for determining the students' learning preferences.

The study was carried out by exposing the Mexican students to the learning environment and allowing them to experiment with it. They were then given a specially-designed team-based case study. After the completion of the case study by students, various learning concepts were revisited using the multimedia system. Finally at the end of the session, the students were interviewed and asked a number of questions on their preferences in learning.

According to the survey results, a vast majority (97%) of these students believed that visual features play a very important role in understanding the concepts, see Figure 1. It is noteworthy to mention that students from Australia and the USA have also reported similar results in terms of preference for visual features for educational multimedia, see Nooriafshar and Todhunter (2004).

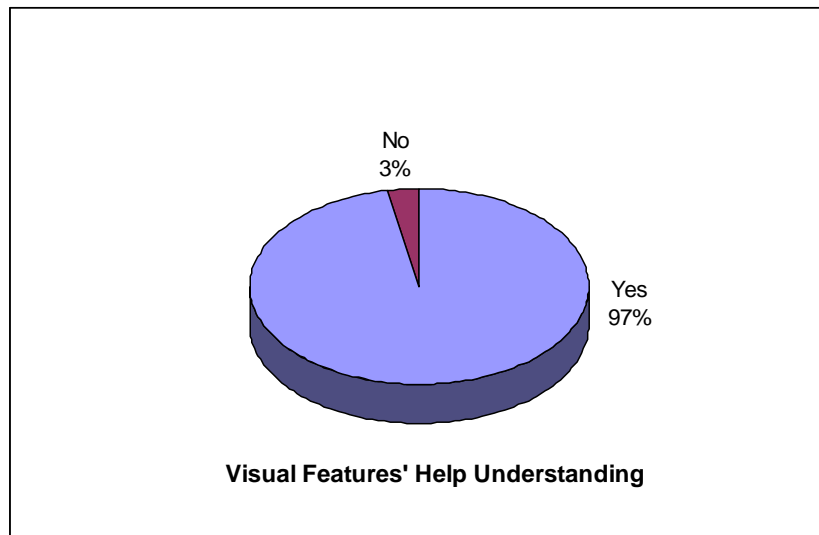


Figure 1 – The visual features' role with understanding project management

Although the native language of all of these students is Spanish, twelve of them have indicated a preference for having the multimedia materials in English rather than Spanish.

It is interesting to note that sixteen participants with a preference for having multimedia materials in their native language, believed that they would benefit from such a choice. A very large portion (fifteen out of sixteen) of these students (preferring native language) reported that they did not need to refer to a dictionary in using the materials presented in the visually rich multimedia learning environment. This finding would suggest that visual features can reduce dependency on language requirements in learning. Hence, educational multimedia materials can be developed in, say English and be available to students whose native tongue is another language. It should be noted that twenty-three out of thirty-four students indicated that they did not rely on a dictionary at all. Like the Australian and American (English-speaking background) students, the Mexican (Spanish-speaking background) students have also shown their preference for learning via a multiple of senses. See Figure 2.

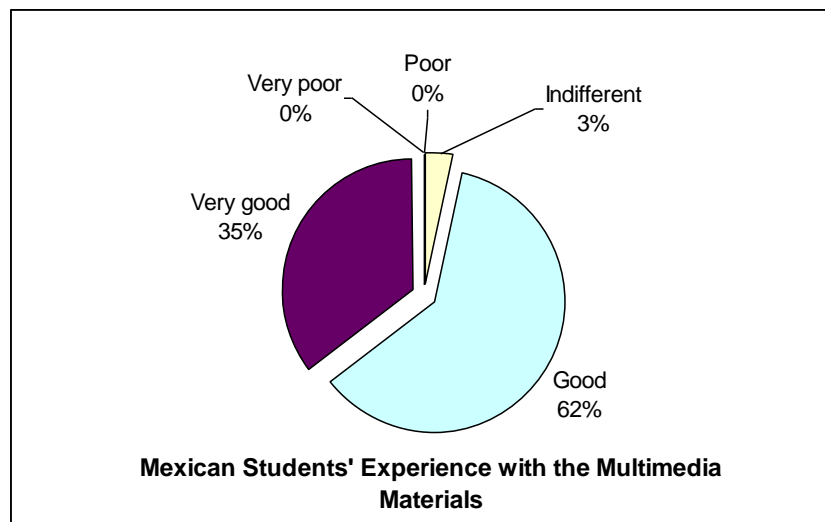


Figure 2 – The Mexican students’ experience with the multimedia materials

The findings indicate that the use of visual effects would certainly assist with internationalisation of the language of education. Now, let us consider how future technologies can contribute to the creation of more direct means of knowledge transfer and further internationalisation of the language of education

Future Possibilities

The use of analogies and visuals in teaching materials is identified as a way of encouraging learners to become “whole-brained”, see Funderstanding (n.d.). When Aristotle said that without images thinking is not possible, he was probably referring to virtual images created in the human mind. So, perhaps the visual feature of our mind is the most active part in creating thoughts.

Other technologies such as virtual reality will allow the learners to be a part of the learning materials and play an important role in future multimedia systems. For instance, virtual reality has been utilized in practical areas such as 3-D modeling of human genes, physics experiments, surgical procedures and tours of terrestrial and celestial landscapes. For details see:

http://www.easypano.com/p_Virtual_Reality_software.html; and
<http://www.iei.uiuc.edu/class.pages/rw2g/virtual.html> .

As suggested by RTI International (2004), a combination of the leading edge technology and educational theory will produce an advanced learning environment, which aims to achieve a cost-effective education. For an introduction to Virtual Reality, see Bier (2004).

Technology is changing and new ideas are being introduced all of the time. For instance, speech recognition will probably make a significant contribution in transforming the means of interaction with teaching materials. It might have sounded far-fetched or a technological prediction if a few years ago, we had claimed that one-day we would be able to convert our language or dialect to any language or dialect via a machine. This is a reality now! *Ectaco* (2001) has developed a very compact machine (*Universal Translator*), which can understand spoken words in English and convert them to French, German or Spanish with perfect accents. Although speech recognition technology has not progressed to achieve one hundred percent accuracy in deciphering every word or phrase, it is intelligent enough not to be too fussy about the speaker's accent. Maybe, one day everyone can choose to talk to each other in their "mother tongue" without too much effort.

Future technologies will enable us to interact with computers in a less formal manner. In other words, we will not have to sit in front of a computer, switch it on and then start typing and mouse-clicking. The main computer will be able to receive commands and requests remotely and produce output to various locations around us. The output will be in the form of holographic images and sound. The speech will be controlled by the user. Hence, the user can choose any language for input or output. The user will be able to interact with the output in a natural manner by touching, separating, lifting and moving parts. Hence, a true virtual reality situation will be created.

Conclusions

The study reported in this paper was undertaken on the students from a non-English-speaking background. Spanish was the native language of all of these students who were studying management related courses. The main outcome of the study has indicated that the majority of these students:

- had a very positive experience with the visually rich multimedia teaching materials;
- believed that the visually rich multimedia teaching materials influenced their understanding of the topics in a very positive way;
- had a preference for visual features in their teaching materials; and
- did not rely on the medium of language to understand the concepts presented to them.

Therefore, by incorporating appropriate visual features, educational multimedia materials can be developed in a generic language like English, and be available to students whose native tongue is another language. Although this is not quite like a direct transfer of ideas to others, it is a step in the right direction.

In this way, most of the language-dependent barriers may be removed and we will achieve that ultimate level of internationalised information transfer and sharing in education.

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Biographic Notes

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